ONTARIO MINISTRY OF ENVIRONMENT
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OPERATING SUMMARY

1974

CITY OF
NANTICOKE

PORT DOVER
WATER POLLUTION CONTROL PLANT

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Port Dover : water pollution
control plant.

81808

Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, WEST-CENTRAL REGION
C. Macfarlane

MANAGER, UTILITY OPERATIONS
B. Hansler

PORT DOVER

WATER POLLUTION CONTROL PLANT

operated for

THE CITY OF NANTICOKE

by the

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

Plant Performance Unit

TECHNICAL SERVICES BRANCH

T. Cross, Director

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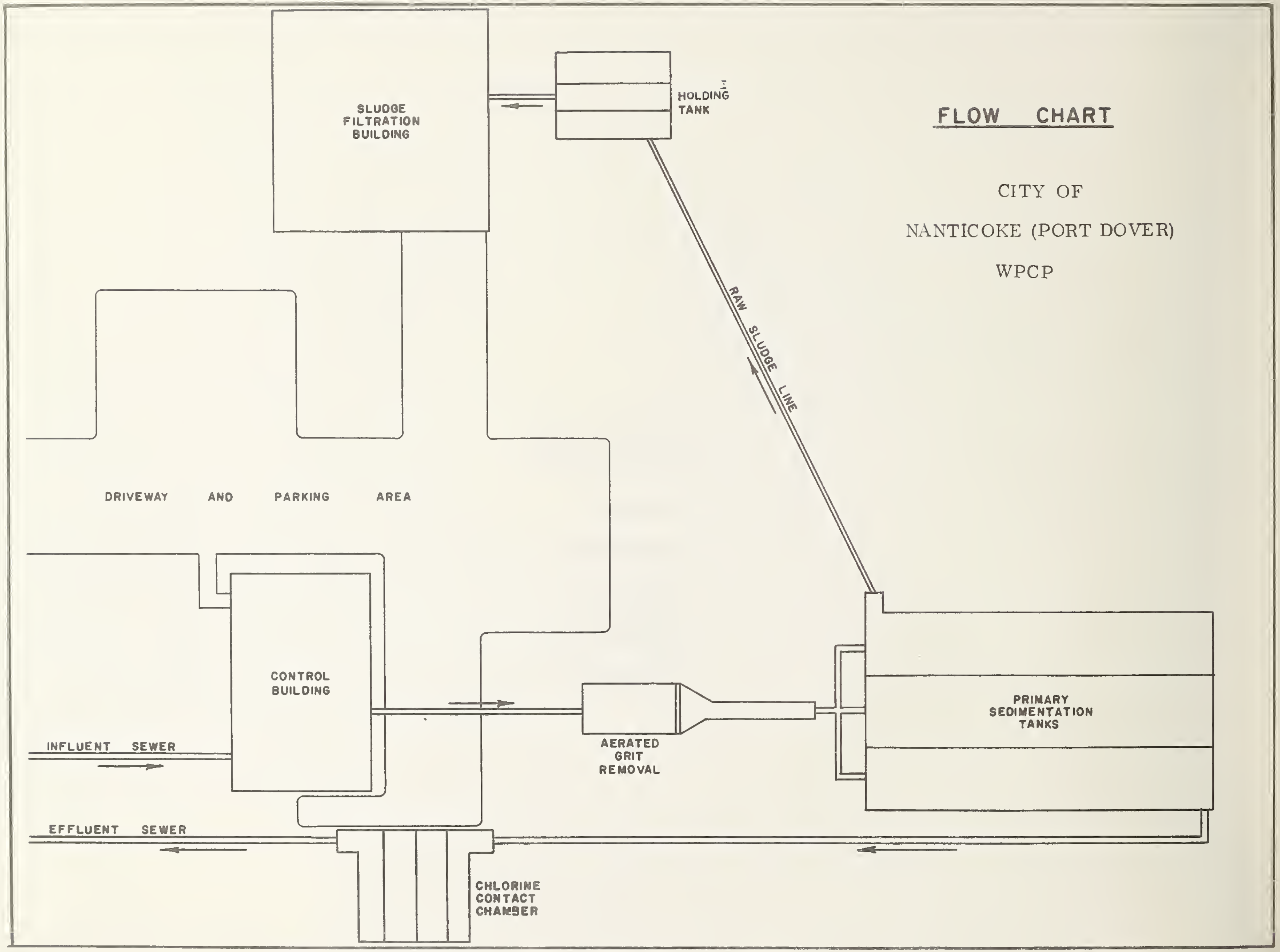


FLOW CHART

CITY OF

NANTICOKE (PORT DOVER)

WPCP

DESIGN DATA

PROJECT	City of Nanticoke Port Dover WPCP
PROJECT NO.	2-0115-62
TREATMENT	Primary
DESIGN FLOW	2.1 mgd
DESIGN POPULATION	5,300
BOD - Raw Sewage	210 mg/l
- Removal	30%
SS - Raw Sewage	296 mg/l
- Removal	60%

RAW SEWAGE PUMPS

Type: Worthington
Size: One 800 gpm @ 24' tdh
One 500 gpm @ 24' tdh
Two 1750 gpm @ 25' tdh

PRIMARY TREATMENT

Grit Removal

Type: Aerated, mechanical grit collector (Rex Chainbelt)
Size: One 20' x 10' x 11.85' (14,750 gal)
Retention: 10 min

Air Supply

Type: Roots-Connersville
Size: Two 130 scfm

Primary Sedimentation

Type: Rex Chainbelt
Size: Three 75' x 15' x 8' (168,000 gal)
Retention: 1.93 hr
Loading: Surface, 620 gal/ft^2/day
Weir, 46,500 gal/ft/day

CHLORINATION

F & P automatic

Chlorine Contact Chamber

Size: One 21½' x 18' x 6½' (15,950 gal)
Retention: 11 min

OUTFALL

to Lake Erie

SLUDGE HANDLING

Aerated holding tank, one 20' x 15' x 8.2' (avg)
Size: 2,460 ft^3 or 12,750 gal

Vacuum Filter

Type: Eimco (cloth)
Size: One 200 sq ft

PUMPS -- TYPE and SIZE

#1 Pumping Station (custom-built)

Type: Worthington
Size: Three 1750 gpm @ 66' tdh (station has one Barminutor, Model C)

#2 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 417 gpm @ 48' tdh

#3 Pumping Station (prefabricated)

Type: Fairbanks-Morse
Size: Two 207 gpm @ 65' tdh

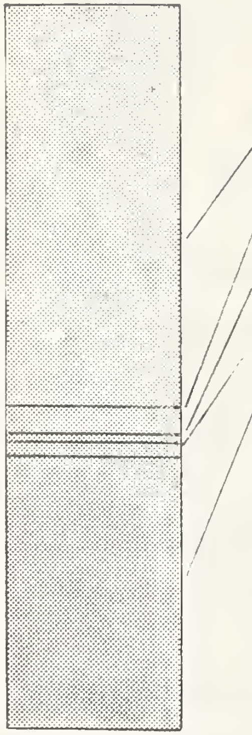
#4 Pumping Station

Type: Flygt submersible
Size: Two 217 gpm @ 19' tdh

NOTE: Above pumping stations have overflows to Lynn River

ANNUAL COSTS

1974 OPERATING COSTS



● SALARIES & WAGES	55 %
● EMPLOYEE BENEFITS	4 %
● TRANSPORTATION & COMMUNICATIONS	<1 %
● SERVICES	2 %
● SUPPLIES & EQUIPMENT	38 %
● AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	
● TRANSFER PAYMENTS	
● OTHER TRANSACTIONS	

YEARLY OPERATING COSTS

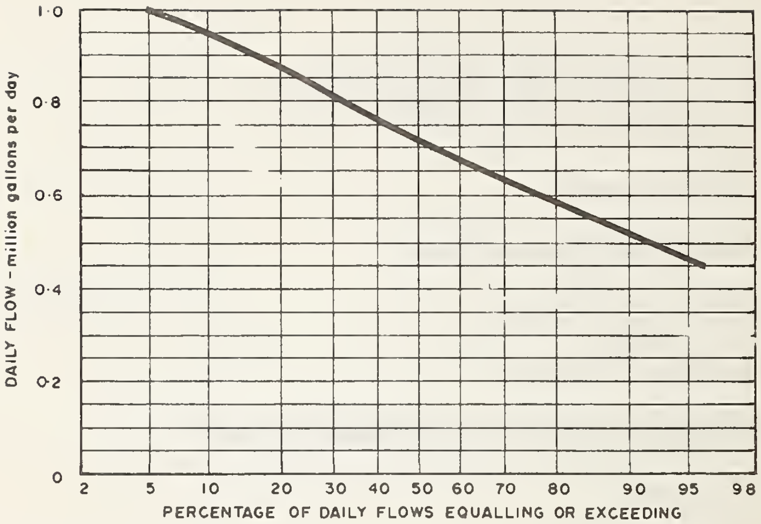
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			$/M.G	¢/lb BOD
1969	133	27,326	208	12
1970	132	28,107	213	22
1971	123	29,330	260	21
1972	163	31,582	193	16
1973	192	47,556	248	10
1974	274	46,543	170	8

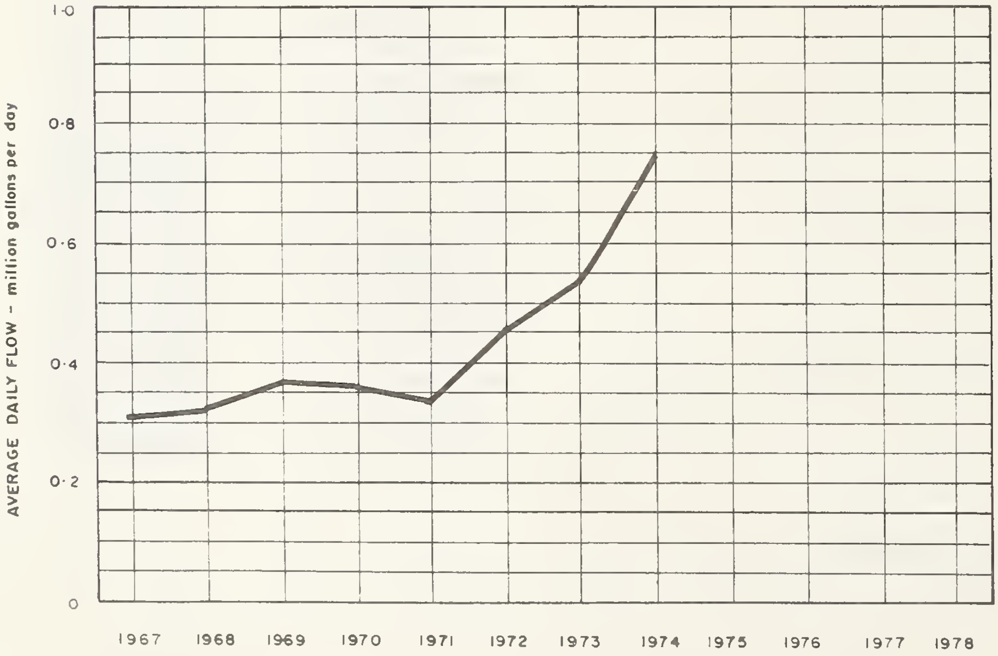
OPERATING EXPENDITURES

Regular Staff	$ 23,338	$
Casual (Unclassified) Staff	2,163	
TOTAL SALARIES AND WAGES		25,501
TOTAL EMPLOYEE BENEFITS		2,018
TOTAL TRANSPORTATION AND COMMUNICATIONS		421
Insurance	1,432	
Sludge Haulage	50	
Repairs and Maintenance	797	
Other Services	1,219	
TOTAL SERVICES		1,060
Machinery and Equipment	788	
Chemicals	6,269	
Utilities	6,230	
Other Supplies and Equipment	4,156	
TOTAL SUPPLIES AND EQUIPMENT		17,443
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		100
TOTAL TRANSFER PAYMENTS		-
OTHER TRANSACTIONS		-
GRAND TOTAL	GRAND TOTAL	$ 46,543

PROCESS DATA

FLOWS



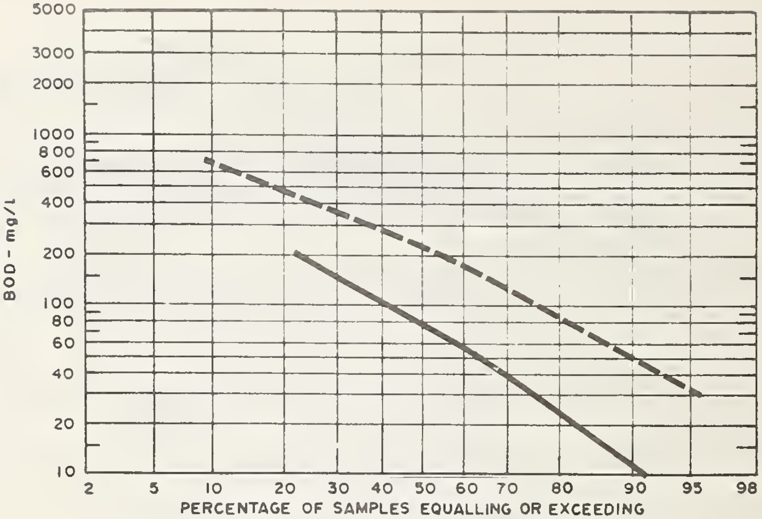


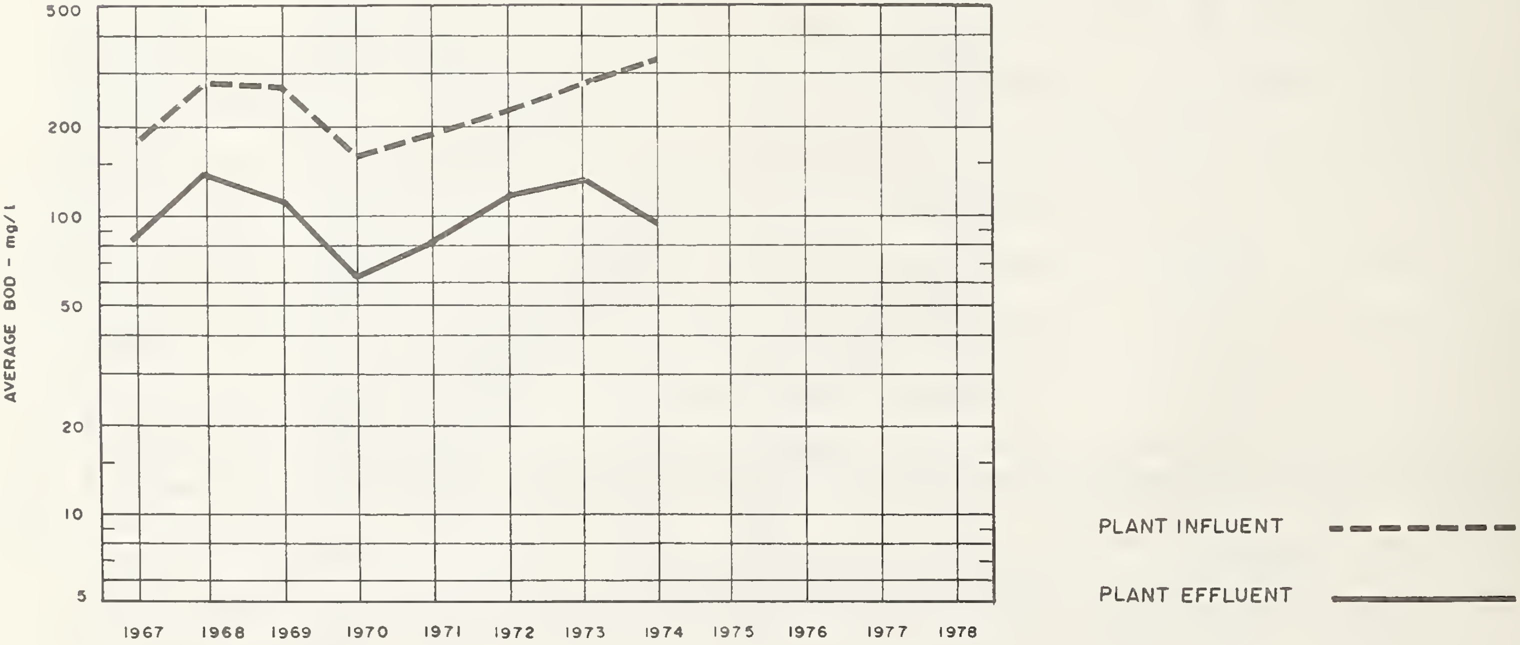
DESIGN CAPACITY 2.1 MGD

PLANT PERFORMANCE

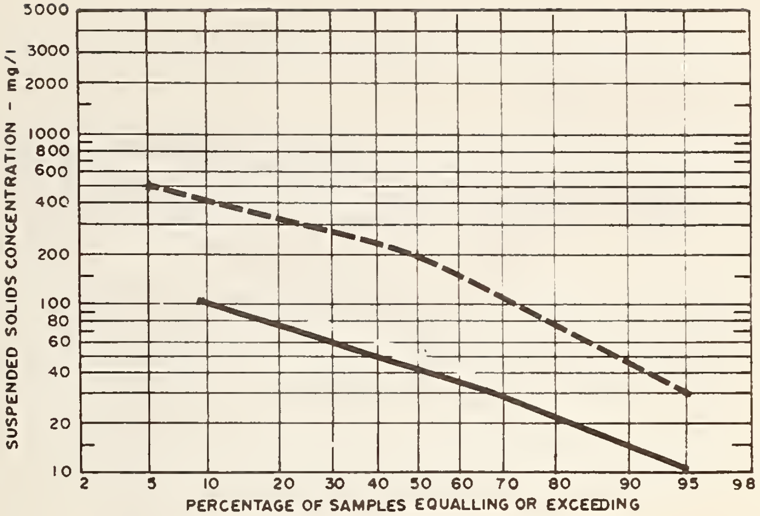
MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10^3 pounds	mg/l	mg/l	%	10^3 pounds	mg/l P	mg/l P
JAN	25.65	.83	1.58										
FEB	18.69	.67	1.75	98	43	56	10.3	60	25	58	6.5	3.8	.3
MAR	19.92	.64	1.56	90	21	77	13.7	140	15	89	24.9	3.0	.3
APR	23.12	.77	1.06	160	42	74	27.3	170	30	82	32.4	3.4	.9
MAY	28.74	.93	1.84	170	62	64	31.0	215	35	84	51.7	4.2	1.0
JUNE	22.25	.74	1.22	500	120	76	84.4		70			10.0	1.7
JULY	24.57	.79	1.21	380	157	59	54.8	213	78	63	33.2	7.3	2.0
AUG	22.21	.72	1.00	470	160	66	68.9	240	70	71	37.8	8.0	2.5
SEPT	22.79	.76	.89	495	240	52	58.1	180	100	44	18.2	7.6	3.1
OCT	20.75	.67	.79	675	72	89	125.4	435	48	89	80.5	10.8	2.3
NOV	21.99	.73	1.00	420	62	85	78.8	245	30	88	47.3	6.0	1.2
DEC	23.73	.77	1.04	90	28	69	14.7	115	25	78	21.3	4.4	.9
TOTAL	274.41	-	-	-	-	-		-	-	-		-	-
AVG.		.75	MAXIMUM 1.84	317	93	71	51.2	210	46	78	37.5	6.1	1.6
No. of Samples	-	-	-	22	22	-	-	19	21	-	-	22	21

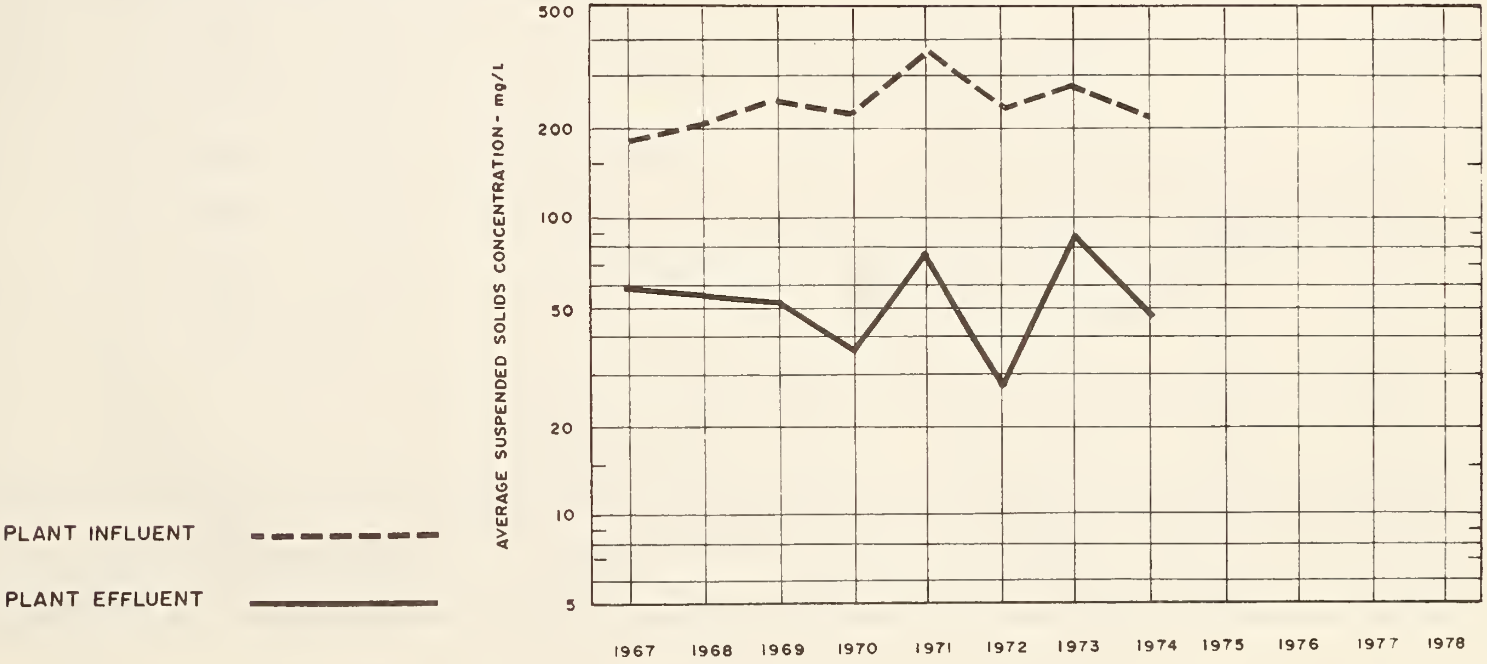
BIOCHEMICAL OXYGEN DEMAND



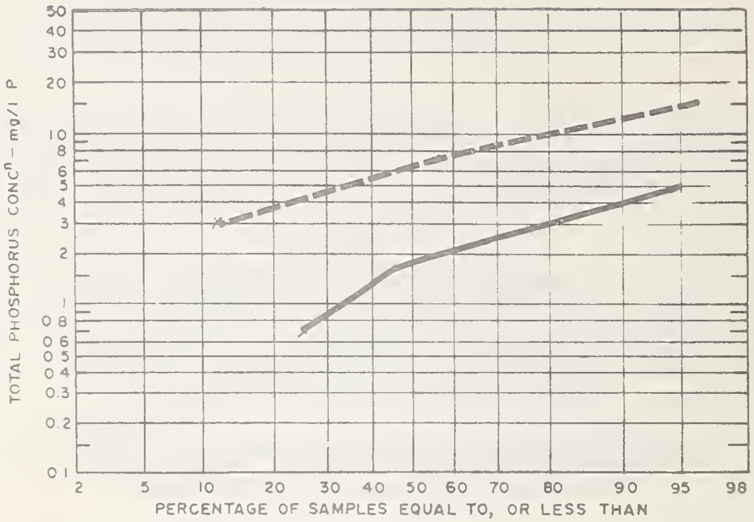


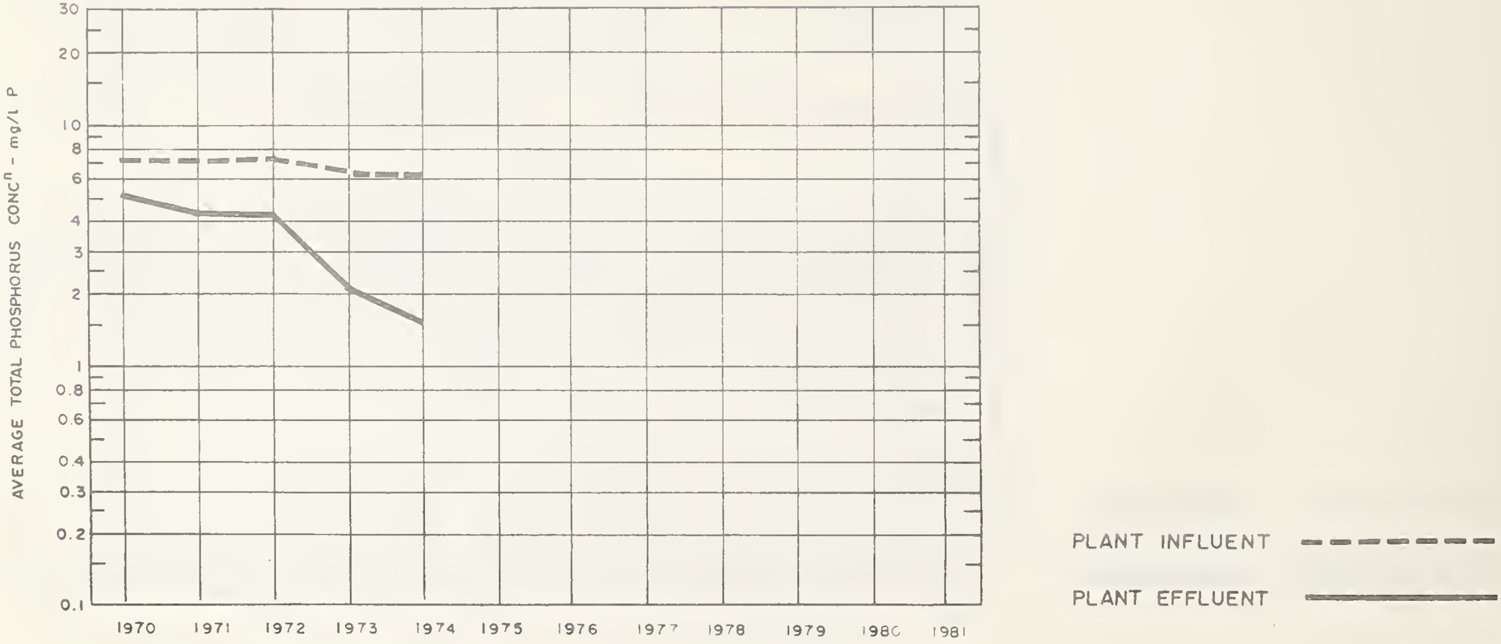
SUSPENDED SOLIDS





PHOSPHORUS


TOTAL PHOSPHORUS CONCⁿ - mg/l P
50
40
30
20
10
8
6
5
4
3
2
1
0 8
0 6
0 5
0 4
0.3
0.2
0 1
2
5
10
20
30
40
50
60
70
80
90
95
98
PERCENTAGE OF SAMPLES EQUAL TO, OR LESS THAN


AVERAGE TOTAL PHOSPHORUS CONCⁿ - mg/l P
30
20
10
8
6
4
3
2
1
0.8
0.6
0.4
0.3
0.2
0.1
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
PLANT INFLUENT
PLANT EFFLUENT

TREATMENT DATA

	GRIT	CHLORINATION		SLUDGE DIGESTION and DISPOSAL							
				RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT	
MONTH	QUANTITY REMOVED cubic feet	CHLORINE USED pounds	AVERAGE DOSAGE mg/l	QUANTITY 10^3 gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	QUANTITY REMOVED 10 gallons	TOTAL SOLIDS %	VOLATILE SOLIDS %	TOTAL SOLIDS %	SLUDGE HAULED cubic yards
JAN				11	8.5						65
FEB				10	8.5						59
MAR				7	8.5						42
APR											
MAY	54	685	2.4	26	8.0						156
JUNE	27	580	2.6	24							144
JULY		1460	5.9	29	7.8						174
AUG		2000	9.0	31	7.8						186
SEPT	27	2323	10.1								
OCT	66	960	10.7								
NOV											
DEC	81			3							18
TOTAL	255	8008	—	141	—	—		—	—	—	844
AVG.	.9 cubic feet/mil gal	1602	5.6		8.1						105